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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,614	08/05/2003	Motohide Takeichi	106973.01	5380
25944	7590	05/18/2006		
OLIFF & BERRIDGE, PLC			EXAMINER	
P.O. BOX 19928			CHANG, VICTOR S	
ALEXANDRIA, VA 22320				
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/633,614	TAKEICHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Victor S. Chang	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 March 2006.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1 and 4-6 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Introduction***

1. The Examiner has carefully considered Applicants' amendments and remarks filed on 3/28/2006. Applicants' amendments to claim 1 and cancellation of claim 7 have been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn.

### ***Rejections Based on Prior Art***

4. Claims 1 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiobara et al. (US 6083774) in view of Shiobara et al. (US 6001901), generally as set forth in section 4 of Office action dated 9/28/2005, together with the following additional reasoning and response to argument.

First, for the purpose of clarification, the Examiner repeats the relied upon prior art as follows: Shiobara '774 is directed to mounting a semiconductor chip on a circuit substrate. The space between the semiconductor chip and the circuit substrate is sealed with an encapsulating resin composition in molten state. The composition contains (a) an epoxy resin, (b) a curing agent, and (c) an inorganic filler (i.e., a thermosetting resin with an inorganic filler) (Abstract). The inorganic filler has a mean particle size from 1 to 15 µm, more desirably 2 to 10 µm; the maximum particle size is

up to 24  $\mu\text{m}$ , more desirably up to 20  $\mu\text{m}$ , most desirably up to 10  $\mu\text{m}$ ; and the specific surface area (BET adsorption method) is 3.5 to 6.0  $\text{m}^2/\text{g}$ . In one example of using fused silica as the inorganic filler, the amount of fused silica used is preferably 100 to 550 parts, more preferably 200 to 450 parts by weight per 100 parts by weight of the epoxy resin and the curing agent combined. Less than 100 parts of fused silica or alumina would be too small to fully reduce the coefficient of expansion whereas compositions containing more than 550 parts of fused silica or alumina would become too viscous to mold.

Referring to newly amended claim 1, which now recites, *inter alia*, “... inorganic silica particles ... the content of said inorganic the silica particles is 10 to 60 vol%35 to 60 vol% ...”, Applicants’ argument “... neither reference teaches or suggests employing ... fillers in the amount recited in claim 1 (35 to 60 vol%)” (Remarks, page 5, middle paragraph, last two lines) has been carefully considered, but is not persuasive. The Examiner respectfully repeats (see Office action mailed 4/22/2005, page 9) that while Shiobara is silent about the volume percent of the silica filler, nevertheless, since Shiobara does teach the same subject matter of the same composition (a curable resin with a silica filler), for the same use (mounting semiconductor chip to a circuit board) as the instant invention, and also teaches suitable ranges of mean and maximum particle sizes, and suitable amount of filler in terms of parts by weight, as set forth above, it is the Examiner’s position that, in the absence of evidence to the contrary, a suitable amount of inorganic filler in terms of volume are either anticipated by Shiobara, or are obviously provided by practicing the invention of prior art. It should be noted that where

the claimed and prior art products are shown to be identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01.

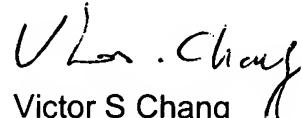
With respect to Applicants' argument "... the maximum total amount of fillers that could be present in the disclosed adhesive composition is less than 20 weight percent. There is no indication in the Office Action or references that the fillers in Shiobara potentially having a specific surface area between 11 and 17 m<sup>2</sup>/g are present in an amount remotely approximating 35 to 60 vol%, as recited in claim 1 ..." (Remarks, page 6), the Examiner respectfully reminds Applicants that "weight percent" does not equate to "vol%", Applicants' argument appears to be misplaced, and is not persuasive, and repeats that since Shiobara does teach the same subject matter of the same composition (a curable resin with a silica filler), for the same use (mounting semiconductor chip to a circuit board) as the instant invention, and also teaches suitable ranges of mean and maximum particle sizes, as set forth above, it is the Examiner's position that, in the absence of evidence to the contrary, a suitable amount of inorganic filler in terms of volume are either anticipated by Shiobara, or are obviously provided by practicing the invention of prior art.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Victor S Chang  
Examiner  
Art Unit 1771

5/11/2006